

IN THE CLAIMS:

Cancel claims 1 and 2 without prejudice or disclaimer.

Please amend the claims and add new claims 13-20 as shown below:

Claims 1 and 2 (canceled)

Claim 3 (currently amended): A semiconductor optical device according to claim 2 5, wherein said blocking semiconductor layer has a thickness of at least 1 μm .

Claim 4 (currently amended): A semiconductor optical device according to claim 2 5, wherein said current blocking part further includes a hole blocking layer comprising an InP semiconductor of a conductivity type opposite from that of said electrically conductive layer.

Claim 5 (currently amended): A semiconductor optical device ~~according to claim 2,~~
comprising:

a semiconductor substrate having a main surface;

a stripe-shaped optical waveguide, disposed on said main surface of said semiconductor substrate, including an active layer;

a current blocking part, disposed on said semiconductor substrate, including a
~~wherein said blocking semiconductor layer has~~ having an InP semiconductor doped with
Fe at a concentration of at least $5 \times 10^{15} \text{ cm}^{-3}$, and having said optical waveguide buried
therein;

an electrically conductive layer disposed on said optical waveguide and current blocking part;

a first electrode electrically connected to said semiconductor substrate, and a second electrode electrically connected to said electrically conductive layer; and

a trench having a bottom in contact with said current blocking part.

Claim 6 (currently amended): A semiconductor optical device ~~according to claim 2,~~
comprising:

a semiconductor substrate having a main surface;

a stripe-shaped optical waveguide, disposed on said main surface of said semiconductor substrate, including an active layer;

a current blocking part, disposed on said semiconductor substrate, including a wherein said blocking semiconductor layer has having an InP semiconductor doped with Fe at a concentration of $5 \times 10^{16} \text{ cm}^{-3}$ or less, and having said optical waveguide buried therein;

an electrically conductive layer disposed on said optical waveguide and current blocking part;

a first electrode electrically connected to said semiconductor substrate, and a second electrode electrically connected to said electrically conductive layer; and

a trench having a bottom in contact with said current blocking part.

Claim 7 (currently amended): A semiconductor optical device according to claim 4 5,
further comprising an insulating film disposed on a surface of said trench.

Claim 8 (original): A semiconductor optical device according to claim 7, wherein said insulating film comprises an insulating silicon compound.

Claim 9 (currently amended): A semiconductor optical device according to claim 4 5, wherein said optical waveguide comprises a first conductivity type semiconductor layer, a second conductivity type semiconductor layer, and an active layer;

said active layer being provided between said first and second conductivity type semiconductor layers.

Claim 10 (original): A semiconductor laser device comprising the semiconductor optical device according to claim 9.

Claim 11 (original): A semiconductor optical modulation device comprising the semiconductor optical device according to claim 9.

Claim 12 (currently amended): A semiconductor optical integrated device comprising:

a semiconductor substrate having a main surface, said main surface including a laser device region and an optical modulation device region arranged in a predetermined direction;

a stripe-shaped first optical waveguide longitudinally extending in said predetermined direction on said laser device region;

a stripe-shaped second optical waveguide longitudinally extending in said predetermined direction on said optical modulation device region;

a current blocking part, disposed on said semiconductor substrate, including a blocking semiconductor layer comprising an InP semiconductor doped with Fe at a concentration of at least $5 \times 10^{15} \text{ cm}^{-3}$, having both of said first and second optical waveguides buried therein;

a an electrically conductive layer disposed on said current blocking part and first optical waveguide on said laser device region;

a an electrically conductive layer disposed on said current blocking part and second optical waveguide on said optical modulation device region;

a first electrode electrically connected to said semiconductor substrate, a second electrode electrically connected to said electrically conductive layer on said laser device region, and a third electrode electrically connected to said electrically conductive layer on said optical modulation device region; and

a trench extending in said predetermined direction along said first and second optical waveguides and having a bottom in contact with said current blocking part;

each of said first and second optical waveguides including a first conductivity type semiconductor layer, a second conductivity type semiconductor layer, and an active layer;

said active layer being provided between said first and second conductivity type semiconductor layers.

Claim 13 (new): A semiconductor optical integrated device comprising:

a semiconductor substrate having a main surface, said main surface including a laser device region and an optical modulation device region arranged in a predetermined direction;

a stripe-shaped first optical waveguide longitudinally extending in said predetermined direction on said laser device region;

a stripe-shaped second optical waveguide longitudinally extending in said predetermined direction on said optical modulation device region;

a current blocking part, disposed on said semiconductor substrate, including a blocking semiconductor layer comprising an InP semiconductor doped with Fe at a concentration of at least $5 \times 10^{16} \text{ cm}^{-3}$ or less, having both of said first and second optical waveguides buried therein;

an electrically conductive layer disposed on said current blocking part and first optical waveguide on said laser device region;

a an electrically conductive layer disposed on said current blocking part and second optical waveguide on said optical modulation device region;

a first electrode electrically connected to said semiconductor substrate, a second electrode electrically connected to said electrically conductive layer on said laser device region, and a third electrode electrically connected to said electrically conductive layer on said optical modulation device region; and

a trench extending in said predetermined direction along said first and second optical waveguides and having a bottom in contact with said current blocking part;

each of said first and second optical waveguides including a first conductivity type semiconductor layer, a second conductivity type semiconductor layer, and an active layer;

said active layer being provided between said first and second conductivity type semiconductor layers.

Claim 14 (new): A semiconductor optical device according to claim 6, wherein said blocking semiconductor layer has a thickness of at least 1 μm .

Claim 15 (new): A semiconductor optical device according to claim 6, wherein said current blocking part further includes a hole blocking layer comprising an InP semiconductor of a conductivity type opposite from that of said electrically conductive layer.

Claim 16 (new): A semiconductor optical device according to claim 6, further comprising an insulating film disposed on a surface of said trench.

Claim 17 (new): A semiconductor optical device according to claim 16, wherein said insulating film comprises an insulating silicon compound.

Claim 18 (new): A semiconductor optical device according to claim 6, wherein said optical waveguide comprises a first conductivity type semiconductor layer, a second conductivity type semiconductor layer, and an active layer;

said active layer being provided between said first and second conductivity type semiconductor layers.

Claim 19 (new): A semiconductor laser device comprising the semiconductor optical device according to claim 18.

Claim 20 (new): A semiconductor optical modulation device comprising the semiconductor optical device according to claim 18.